AUSTRALIAN RECENT AND TERTIARY MOLLUSCA

(Terebridae, Rissoinidae, Rissoidae, Fasciolariidae, Volutidae)

Plates III and IV

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SUMMARY

All Australian Recent and Tertiary species of Terebridae and Rissoinidae are reviewed. Three new species of the family Terebridae, *Pervicacia subplicata*, *P. helenae* and *Nototerebra flindersi* are introduced. Keys to the genera of *Rissoinidae* and the subgenera of *Rissoina* are given and the new species *Rissoina vincentiana*, *R. grata*, *R. fiscina*, *R. jaffa* and *R. axiscalpta* are described.

A new genus and species of the Rissoidae is proposed and the Tertiary species of that family are listed.

Two genera of the Fasciolariidae, *Pleuroploca* and *Colus*, are considered. To the family Volutidae is added a new species, *Ericusa orca*.

Family TEREBRIDAE

This family, some species of which possess a poison gland similar to that of the Conidae, is grouped with that family in the Toxoglossa.

Names which have been incorrectly used for Australian shells and later proved to be exotic only are:—*Terebra brevicula* Deshayes 1859 = *T. albocincta* Carpenter, Californa. *Terebra buccinulum* Deshayes 1859 = "*Bullia turrita* Gray" belonging to the family Nassidae. *Terebra fenestrata* Hinds 1843 = *Terebra caelata* Adams and Reeve 1850, China. *Terebra turrita* Smith 1873, Torres Straits = *T. textilis* Hinds 1843, Manila Bay. *Terebra polygyrata* Deshayes 1859 = *T. subtextilis* Smith 1879, Japan. *Terebra flammea* Lamarck 1822 = *T. incomparabilis* Deshayes 1859 = *Epitonium feldmanni* Bolten 1798, West Indies. *Duplicaria addita* Deshayes 1859 = *T. spectabilis* Hinds 1843, Ceylon. The large Indo-Pacific species of typical *Terebra* with characteristic colour patterns occur plentifully as species and individuals in the Damperian, Banksian, and Solanderian regions of northern Australia.

TEREBRA Lamarck

Terebra Lamarck 1799. Mem. Soc. Hist. Nat., Paris, **71**.

Genotype—*T. subulata* Linne 1767. A synonym is *Terebrum* Montfort 1810. Species of the genus which have been recorded principally from northern Australia, most of them with a wide Indo-Pacific distribution, are *T. subulata* Linne 1767, *T. crenulata* Linne 1758, *T. dimidiata* Linne 1758 = *T. guttata* Bolten 1798, *T. oculata* Lamarck 1844, *T. muscaria* Lamarck 1822, *T. affinis* Gray 1834, *T. cancellata* Quoy and Gaimard 1822, *T. chlorata* Lamarck 1822, *T. circumcincta* Deshayes 1857, *T. columellaris* Hinds 1844, *T. exigua* Deshayes 1859, *T. jukesi* Deshayes 1857, *T. marmorata* Deshayes 1859, *T. ornatum* Martyn 1786, *T. polygyrata* Deshayes 1859, *T. straminea* Gray 1934, *T. taylori* Reeve 1860, *T. tenera* Hinds 1844, *T. turrita* Smith 1873, *T. undulata* Gray 1934, *T. hastata* Gmelin 1791, *T. bathyraphe* Smith 1875, *T. bernardi* Deshayes 1857, *T. albula* Menke 1943, *T. sublata* Linne 1758, W.A., *T. walkeri* Smith 1899 = *T. assimilis* Angas 1867, *T. lauretanae* Tenison Woods 1879, *T. tabifica* Iredale 1925.

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* South Australian Museum.

In the South Australian Museum collection *T. muscaria, T. bernardi, T. chlorata* were noted from Moreton Bay, and *T. circumcincta* from Caloundra.

PERVICACIA Iredale

Pervicacia Iredale 1924. Proc. Linn. Soc. N.S.W., **49**, 262.

Genotype—Terebra ustulata Deshayes 1857 Tasmania. Species belonging to this genus and their range are as follows.

P. ustulata Deshayes 1857. Tas. (type), N.S.W., Vict., S. Aust. The species is rare in South Australia. We have it from Pondolowie Bay, Yorke Peninsula, and some small specimens dredged in 10 fms. off Yankalilla. Pl. iii, fig. 2.

P. assecla Iredale 1924. N.S.W. (type), S. Aust., Vict. The New South Wales type was dredged in 10-25 fms. South Australian specimens were taken in 110 fms. off Beachport and 130 fms. off Cape Jaffa.

P. kieneri Deshayes 1859. N. Tas. (type), Vict., S. Aust. This is the shell originally referred to as *Terebra duplicata* var. *junior* Kiener. Kiener gave "Indian Ocean and Mauritius" for its locality. The figure is an excellent one of the South Australian species. It is the most common *Terebra* in southern Australia and can be taken in numbers in certain localities on the beach or dredged down to 22 fms. We have it from Hopetoun, King George Sound, Rottnest and Albany, Western Australia. The name *T. ustulata* Deshayes in Adcock's list of South Australian shells was intended for this shell, but as mentioned above *P. ustulata* is rare in South Australia. There is great variation in comparative attenuation and costation. Some have well-marked and subdistant ribs, others have them very crowded and fine, while others again have the former sculpture in early whorls and the latter in the later volutions. Colour varieties may be pure white throughout, or the nucleus and earlier whorls dark purple and a light purple tinge in the rest of the shell. Some of the albino variants have the ribs rather distant and valid and approach the Tasmanian shells once named *T. jukesi* later corrected to *T. bicolor*. The ribs of *T. bicolor* are more numerous than in our shell, the groove separating the infrasutural nodules from the lower part of the shell is much wider and gutter-like, and there are sublenticular inter-costular spiral striae, and the lower half of the shell is coloured too, giving a median white band. There are three principal variants.

a. Axial ribs more distant and valid, nodulose at the suture and spiral sulcus. More attenuate than average.

b. White, less solid, apex purplish in some, white in others.

c. White, narrow, solid, area beneath suture depressed. Ribs subdistant, valid. Almost like an albino form of *P. ustulata* but more attenuated than the average example of that species.

P. bicolor Angas 1867. N.S.W. (type), Vict.

Typical specimens of this do not occur in South Australia, its place apparently being taken by **P. subplicata** sp. nov. Odd specimens labelled *T. bicolor* in the Museum Collection said to come from South Australia have no definite locality.

P. fictilis Hinds 1844. N.S.W. (type), Vict.

The species, like *P. bicolor*, appears to be confined to the Peronian region. Hedley 1900 refigured and described the species and noted that *Terebra assimilis* Angas 1867 is a synonym. It differs from *P. bicolor* in being stouter, and in having broad, low axial ribs.

Pervicacia subplicata sp. nov.

(Pl. iii, fig. 3)

Shell thin, protoconch of two smooth turns, slightly mammillate, blunt; spire whorls sloping, slightly constricted just above the centre, suture distinct; aperture obliquely ovate, small; outer lip thin; columella convex thin; sculpture of adult whorls consists of obsolete irregular roundly flattened sinuous axial riblets which in the last whorl are very faintly marked below the periphery; whole surface very closely but irregularly sublenticularly jaggedly spirally incised; colour brown, light horn or lavender with dark horn coloured sinous longitudinal markings chiefly in the spaces between the axial riblets. Height 14 mm., width 3·5 mm.

Locality—Backstairs Passage 20 fms. (type). Beachport 40-150 fms. Rare on the beach.

Remarks—Holotype Reg. No. D. 10177, S. Aust. Museum.

It may be a South Australian species related to *P. bicolor* being similar in protoconch features, but the adult shell of *P. subplicata* is thinner and less validly sculptured.

Pervicacia helenae sp. nov.

(Pl. iii, fig. 1)

Shell elongate, subulate, rather solid, glossy, whorls dark-cream coloured with a narrow dark brown spiral band occupying the space between the suture and the subsutural sulcus beneath; base of the body whorl also dark brown. Sculpture of thick sinuous axial ribs, the tips cut off by a weak subsutural sulcus situated very close to the suture. Protoconch of two smooth, white glossy whorls, the first mammillate. Adult whorls eleven, the sculpture consistent from the first to last whorl. Outer lip rather thick, columella smooth, concave. Height 24 mm., diameter 11 mm.

Locality—Eyre Peninsula, Farme Beach, Coffins Bay. Holotype Reg. No. D. 14436, S. Aust. Museum.

Remarks—A series shows the shell to be consistent in characters and not variable. The holotype and other specimens presented to the South Australian Museum are adults. They differ from *P. ustulata* in being smaller, having a weak subsutural sulcus very near to the suture, convex, shorter whorls. A series of specimens was taken by Mr. J. Veitch, a West Coast collector, and forwarded for examination to the South Australian Museum by Mr. B. J. Weeding. They are named after Mr. Veitch's daughter, a keen collector.

NOTOTEREBRA Cotton

Nototerebra Cotton 1947. Rec. S. Aust. Mus., **8**, No. 4, 667.

Genotype—*Terebra albida* Gray 1834. Vict. *N. albida* Gray 1834. Vict. (type), S. Aust., Tas., W. Aust.

The rusty colouration is sometimes disposed as an infrasutural row of spots and at other times in oblique longitudinal markings. One individual has a depressed infrasutural band scarcely visible in the earlier whorls, but quite distinct in the later ones. The shell is not actually smooth, there are oblique sinuous accremental striae minutely crenulating the suture, and in some specimens these are gathered into groups so as to form very flat, low triangular riblets most valid just below the suture. The protoconch is of one turn and a half, slightly inflated whorls. Our specimens are from Middleton, Spencer Gulf, Port Phillip and Esperance, Western Australia.

Nototerebra flindersi sp. nov.

(Pl. iii, fig. 4)

Shell elongate, white, faintly marked with rust-like stains, protoconch of one and a half smooth, very slightly inflated whorls; adult whorls nine, narrow, very little convex, suture linear, weakly margined below by an obscure spiral impression; sculpture of sinuous, axial, irregular accremental striae. Height 25 mm., width 6 mm.

Locality—S. Aust., Beachport, 100 fms. (type) 150 fms., Cape Jaffa 130 fmts.; W. Aust., Rottnest, Ellenbrook. Holotype Reg. No. D. 14435, S. Aust. Museum.

Remarks—The species is smaller and narrower than *N. albida* and the subsutural depression is comparatively more marked.

ACUMINIA Dall.

Acuminia Dall. 1908. Nautilus, **21.** No. 11, 124-125.

Genotype—Terebra lanceata Linne 1788. Indo-Pacific.

Typical species of this genus have no presutural sulcus, the shell is slender and smooth, whorls flattened, earlier whorls plicated, white, with chestnut axials. Columella with one fold.

A. brazieri Angas 1871. N.S.W. (type) Vict., Tas., S. Aust. The protoconch is elongate and consists of four and a half glossy, smooth dark purplish-brown whorls. Adult whorls are sculptured with axial riblets which nodulate the margin of the suture, the axials becoming comparatively weaker in the latter part of the shell. Dredged alive in 22 fms. off Royston Head, 20 fms. off Newland Head, also 15 fms. in Investigator Straits, Backstairs Passage and Gulf St. Vincent. It is also infrequently taken dead on the beach. Tate took it in the Great Australian Bight. The whorls which are typically "obsoletely distantly plicate" may be quite validly costellate, the costellae being broadly concavely triangular in section. The spire and body whorls are sublenticularly spirally striate, the striae crossing the axial riblets. There is a rare variant sometimes taken in South Australia which has the shape of *A. brazieri* but longitudinal plications are almost as well marked as those of *Pervicacia kieneri*. This variant we have from Royston Head 22 fms., Newland Head 26 fms., Investigator Strait 14 fms., and Kangaroo Island 13 fms.

PARVITEREBRA Pilsbry

Parviterebra Pilsbry 1904. Proc. Acad. Nat. Sci., Philad., **56,** 5.

Genotype—Parviterebra paucivolvis Pilsbry 1904. Japan.

The genus is distinguished by the narrow, fusiform shell, few whorls, absence of subsutural groove, long, gradually tapering body—whorl without a differentiated siphonal fasciole at the base, columella straight abruptly truncated below. The Australian species *P. brazieri* and *P. trilineata* were once placed in the genus *Euryta* H. and A. Adams 1853 (not Gestel 1848), a synonym of *Mazatlania* Dall 1900, belonging to the family Pyrenidae, where Theile also places *Parviterebra.*

P. brazieri Angas 1875. Jackson Heads, 25 fms. N.S.W. (type), Tas., Vict., S. Aust., W. Aust. Synonyms are *Euryta angasi* Tryon 1884, Rapid Head, S. Aust., a name introduced by Tryon to replace *Euryta pulchella* Adams and Angas 1863, Rapid Bay, S. Aust., "preoccupied in *Terebra* by Deshayes," *Mangelia harrisoni* Tenison Woods 1878, Clarke Island, Vict., *Olivella australis* Tenison Woods 1878, Clarks Island, Vict. Shells of the present species in the Verco Collection were identified by Sowerby from types in the British Museum of *E. pulchella* and Verco confirmed the identification on a later visit to London. He writes in M.S.S.: "The type is a dead shell and very faintly coloured."

The specimens of *E. brazieri* in the British Museum from off Port Jackson Heads are, Verco continues, "exactly the same, only more highly coloured, like the best coloured of mine." Localities of specimens in the Museum Collection are:—S. Aust., Investigator Strait 15 fms., 20 fms., Newland Head 20 fms., Pondolowie Bay, Backstairs Passage 20 fms., Porpoise Head 12 fms., Spencer Gulf; W. Aust., Hopetoun 35 fms., King George Sound 12-14 fms., Bunbury, Rottnest; N. Tas.

There is a narrow variant taken at Hopetoun 35 fms., one specimen. Beach specimens are rare, the species apparently living in deep water.

P. trilineata Adams and Angas 1863. Port Jackson, N.S.W. (type), Vict., S. Aust.

This is more slender than *P. brazieri* and the whorls are encircled with thread-like lines. We have it from South Australia, St. Francis Island, Port Lincoln, Edithburg, Backstairs Passage 17 fms., Investigator Strait.

TRIPHOSTREPHANUS Dall.

Triphostrephanus Dall 1908. Nautilus 22, No. 11, 124-125.

Genotype—Terebra triseriata Gray 1834. China.

Very elongate and narrow, presutural sulcus present, whorls nodulous at both margins.

T. praelonga Deshayes 1859. Q. (type), N.S.W., N.A.

A series of this species from Port Keats, north Australia, confirms the fact (Iredale 1931) that Australian shells taper less rapidly than the Chinese genotype. Our specimens suggest that *T. praelonga* does not attain to the great length of *T. triseriata*, our only shell of that species from Japan measures 135 mm. and the maximum Port Keats shell 90 mm.

DIPLOMERIZA Dall

Diplomeriza Dall 1919. Nautilus, 33, No. 1, 32.

Genotype—Terebra duplicata Lamarck 1844. Indian Ocean.

The generic name was introduced to replace *Duplicaria* Dall 1908, preoccupied by Refinesque 1833 for a species of *Chilina*.

D. duplicata Lamarck 1844. N.W.A., N.A.

A series of living specimens from Broome, N.W.A., range in colour from pure white to dark brown. We have also a series from Darwin and Melville Island.

D. ballina Hedley 1915. N.S.W. (type), Qld.

The type came from Trial Bay, collected by C. Laseron, and Kesteven took it at Caloundra. It is not represented in the South Australian Museum Collection. Hedley compared it with *D. ustulata* Deshayes in the original description, remarking that it differed "by being more slender, and has fewer wider-spaced ribs."

D. vallesia Hedley 1912. N.S.W. (type).

The type was collected by C. Laseron at Trial Bay. This species is represented in the South Australian Museum Collection by typical specimens from that locality.

D. australis Smith 1873. S.W.A. (type), N.W.A., N.A.

So far no authentic specimens of this species have been found in the South Australian Museum Collection, but numerous juvenile specimens of *D. duplicata* from Broome and Darwin approximate to this species.

PERIRHOE Dall

Perirhoe Dall 1908. Nautilus, 22, No. 11, 125.

Genotype—Terebra circumcincta Deshayes 1857. Red Sea.

Australian species belong to the subgenus *Dimidacus* Iredale 1928 introduced for *Perirhoe melamans* Iredale 1928 for species having the spiral lines punctate as distinct from typical *Perirhoe* which has the spiral lines not punctate. Iredale 1928 pointed out that Bartsch 1923 proposed the subgenus *Terebrina*, genotype *Terebra cingulifera*, a punctate type, but this name is preoccupied by ***Terebrina*** Rafinesque 1815.

P. cingulifera Lamarck 1822. Described from unknown locality.

Our specimens are from Mauritius and Port Douglas, Queensland. A synonym is *Terebra pallida* Deshayes 1857. Marquesas group.

P. monile Quoy and Gaimard 1833. Marianes or Carolines (type), Qld. *P. albomarginata* Deshayes 1859. Australia (type), N.S.W. *P. exulta* Iredale 1931. N.S.W. (type). *P. melamans* Iredale 1829. N.S.W. Sydney Harbour (type). *P. pertusa* Born 1778. Qld., N.S.W., N.A. (type).

OXYMERIS Dall

Oxymeris Dall 1903. Proc. U.S. Nat. Mus., **26**, 951.

Genotype—Buccinum maculatum Linne 1758. Indo-Pacific. Whorls rapidly enlarging, presutural sulcus obsolete in the adult.

O. maculata Linne 1758. We have a typical series from Melville Island, North Australia (Sayers), Murray Island (A. M. Lea) and the Barrier Reef, Queensland.

O. felinum Dillwyn 1817. Indo-Pacific; Queensland. South Australian Museum specimens are from Seychelles, Mauritius and Moreton Bay, Queensland. Formerly named *Terebra tigrina* Gmelin 1791, pre-occupied.

O. nebulosa Sowerby 1824. This species has been recorded from Queensland, but our only series is from Zanzibar.

TERENOLLA Iredale

Terenolla Iredale 1929. Mem. Qld. Mus., **9**, pt. iii, 282.

Genotype—Terebra pygmaea Hinds 1843. Straits of Malacca.

This has not so far been seen in the South Australian Museum collection, but it was recorded from Michaelmas Cay, Queensland, by Iredale, 1929.

Euterebra inconspicua and *Gradaterebra scalariformis* of southern Australia and Tasmania complete the list of recent Australian species of the family.

HASTULA H. and A. Adams

Hastula H. and A. Adams 1853. Gen. Rec. Moll., **1**, 225.

Genotype—Buccinum strigilatum Linne 1758. Indo-Pacific.

Shells small, slender, sculpture of regular, moderately developed axial ribs, no presutural sulcus, suture appressed.

H. strigilata Linne 1758. Queensland, North West Australia. South Australian Museum specimens are from Louis Island and Broome, West Australia, and Moreton Bay, Queensland.

H. cerithina Lamarck 1827. Timor (type); Queensland. Six specimens from Moreton Bay, Queensland.

H. hastatum Gmelin 1791. Indo-Pacific (type); Queensland. Two specimens from Moreton Bay, Queensland.

TERTIARY SPECIES

None of the Australian Tertiary species of Terebridae appear to belong to the typical genus *Terebra*. In these notes I have placed them tentatively in the genera named. The numbers following the type locality refer to the range of the species according to the Marine stage listed below.

1.	Werrikooian - - - - -	Upper Pliocene
2.	Kalimnan - - - - -	Lower Pliocene
3.	Cheltenhamian - - - - -	Upper Miocene
4.	Balcombian - - - - -	Middle Miocene
5.	Janjukian - - - - -	Lower Miocene

Pervicacia crassa Tate 1886. Aldinga, South Australia, upper beds. 2.
P. additoides Tenison Woods 1877. Table Cape, Tasmania. 5,2.
P. mutica Tate 1889. Muddy Creek, lower beds. 4.
Acuminia leptospira Tate 1888. Muddy Creek, lower beds, Victoria. 4.
A. profunda Chapman and Gabriel 1914. Mallee bore, Victoria. 2.
Nototerebra simplex Tenison Woods 1876. Table Cape. 5, 2.
N. platyspira Tate 1886. Muddy Creek, lower beds. 4.
N. angulosa Tate 1888. Murray Desert, well sinking, South Australia. 3, 2.
N. mitrellaeformis Tate 1886. Aldinga, upper beds. ?.

TRIPHOSTREPHANUS PLATYSPIRA Tate

Triphostrephanus platyspira Tate 1886. Muddy Creek, lower beds. 4.

The species is placed in this genus because it is comparatively very elongate and has numerous (25)whorls. The sculpture is different from that of the genotype, that of *T. platyspira* being comparatively weakly developed. The protoconch is rather distinctive, large, bulbous, considerably broader than the first few shell whorls, apex reverted and immersed.

GEMMATEREBRA Cotton 1952

Genotype—Terebra catenifera Tate 1886. Muddy Creek, upper beds.

Shell pyramidal, whorls flattened, slightly overlapping, two spirally and axially striate; protoconch mamillate of two rather large, smooth, convex whorls.

G. catenifera Tate 1886. Muddy Creek, upper beds. 2. Pl. iii, fig. 5.
G. subcatenifera Tate 1889. Cunninghame and Jemmy's Point, Gippsland. 2.

NODITEREBRA Cossman

Noditerebra Cossman 1896. Pal. Comp., 2, 51.

Genotype—Terebra geniculata Tate 1886. Muddy Creek, upper beds. 2.

N. geniculata Tate 1886. Fragments of this species were noted in Adelaidean material from bores. Pl. iii, fig. 7.

SPINEOTEREBRA Sacco

Spineoterebra Sacco 1891. .Moll. Piemonte Figuria, 58.

Genotype—Terebra spinulosa Doderlein. Miocene, Italy.

In this genus the shell is pupoid, subsutural sulcus absent, aperture narrow, suture appressed, columella callous, truncate anteriorly, whorls costulate.

S. subspectabilis Tate 1889. Muddy Creek, upper beds. 2, 4.
S. convexiuscula Tate 1889. Muddy Creek, upper beds. 2.

Family RISSOINIDAE

The typical *Rissoina* is axially costate and has the aperture produced below. This genus and its associates are here recognised as constituting the family Rissoinidae as distinct from the Rissoidae.

Tate 1889, Trans. Roy. Soc. S. Aust., **23**, 230, reviewed the recent Rissoidae of Australia, placing the 78 species then recorded from Australian waters in the two genera *Rissoa* and *Rissoina*, "viewed in their widest acceptation." In his *"Rissoinae"* (Rissoinidae), he used nine "subgroups" which are nowadays regarded by conservative workers as sections or subgenera and by others as full genera.

In this account four genera are recognised, *Scaliola, Rissoina, Rissolina* and *Stiva*. They may be distinguished by the following key.

Key to Genera

a. Operculum spiral
  b. No funicular rib on base
    c. Smooth, with agglutinated sand grains .... *Scaliola*
    cc. Sculptured .... *Rissoina*
  bb. Funicular rib on base .... *Rissolina*
aa. Operculum not spiral .... *Stiva*

Scaliola Adams 1860

Genotype—Scaliola bella Adams 1860. Japan.

Shell turriculate, umbilicate, thin, white, whorls smooth but covered with agglutinated grains of sand. The genus ranges from Japan to Australia and the Red Sea. It was originally described as a subgenus of *Scala*. Theile places it in the family Finellidae. From apertural features it is regarded here as belonging to the Rissoinidae.

S. bella Adams 1860. Japan (type), North Australia, Queensland.
= *S. lapillifera* Hedley 1899. Funafuti (type).
S. arenosa Adams 1862. Japan (type), North Australia, Queensland.
S. caledonica Crosse 1870. New Caledonia (type), Queensland.
S. elata Issel 1869. Red Sea (type), Queensland.

Tryon, in his Manual of Conchology, mentions two further species, *S. glareosa* and *S. gracilis* Adams from Japan.

Rissoina Orbigny 1840

Genotype—Rissoina inca Orbigny 1840. Peru.

Shell axially costate, aperture produced below, no funicular rib. The type species is strongly axially costate throughout, the costae becoming stronger on the body whorl. Apex mammillate, aperture similunar, lip thickened and a little reflected, anteriorly effuse or faintly channelled.

Operculum corneous, thick semilunar, paucispiral, with a claviform process on the interior face. The genus is cosmopolitan in warm and temperate seas. Australian species may be arranged in subgenera. *Moerchiella, Phosinella, Zebinella, Pyramidelloides* and *Schwartziella*.

Key to Subgenera

a. Aperture with strong basal emargination
  b. No nodulose spiral ribs
    c. Axially costated .... *Moerchiella*
    cc. Reticulate
      d. Sculpture coarse .... *Phosinella*
      dd. Sculpture fine .... *Zebinella*
  bb. Nodulose spiral ribs .... *Pyramidelloides*
aa. Aperture with weak basal emargination .... *Schwartziella*

Moerchiella Nevill 1880

Genotype—Rissoina gigantea Deshayes 1848. Philippines.

Shell comparatively large, thick, upper part of shells axially ribbed, lower part smooth or spirally striate. This subgenus is preferred for the Australian species, the true *Rissoina* being very boldly axially ribbed through, including the body whorl.

Thiele 1925, inadvertently introduced *Mörchiella* to replace *Mörchia* Adams 1860, preoccupied by Albers 1850. He later, 1931, corrected this to *Mörchinella*. That genus belongs to the Adeorbidae.

R. spirata Sowerby 1825. Philippines (type). New Guinea, North Australia. A synonym is *R. montrouzieri* Souverbie 1862.

R. triangularis Watson 1886. Ascension Island (type), Queensland, North Australia.

R. variegata Angas 1867. New South Wales, Port Jackson (type); Tasmania, King Island; Victoria, Port Phillip; South Australia, St. Francis Island, Sceales Bay, Guichen Bay, Port Elliston, Macdonnell Bay; West Australia, Ellenbrook, Yallingup, Esperance, Rottnest and Hopetoun.

R. gertrudis Tenison Woods 1875. Tasmania, King Island (type); Victoria; South Australia, Guichen Bay, Macdonnell Bay, Beachport 45 fms., 110 fms., Edithburg.

Rissoina vincentiana sp. nov.

(Pl. iii, fig. 9)

Shell large, thick, cream-coloured to white with a spotted brown band below the suture; whorls seven, rather flattened, very finely spirally striate and axially plicate, the axials becoming weaker on the later whorls, obsolete on the body whorl and absent towards the middle and base; suture very narrowly channelled, aperture large, pyriform, outerlip effuse below and very thick; protoconch of two smooth whorls. Height 10 mm., width 3·5 mm.

Locality—South Australia; Gulf St. Vincent, Glenelg (type). In shell sand and generally along the southern Australian coast and dredged. Investigator Strait 15-20 fms., Port Lincoln 9 fms. West Australia: Ellenbrook, Rottnest, Yallingup. Victoria.

Remarks—Holotype, Reg. No. D14438 Sth. Aust. Museum. This Flindersian species is large, thick, and has a gradually weakening axial sculpture. It has been confused with *R. spirata* Sowerby 1824, Philippines, *R. variegata* Angas 1862, New South Wales, *R. gertrudis* Tenison Woods 1836 and *R. orbignyi* Adams 1853, Philippines and other Indo-Pacific species. It is most like *R. spirata,* which is much longer and has a marked torsion of the axis. A specimen of *R. spirata* from Milne Bay, New Guinea, measures 15 mm. in length, has ten whorls and a comparatively small protoconch.

Rissoina grata sp. nov.

(Pl. iii, fig. 6)

Shell small, narrow, solid, shining white, suture impressed, whorls round; axial ribs stout a little sinous equivalent in width to the interspaces, nine on the body whorl, nodulating the suture; aperture semilunar, lips thickened, protoconch of two smooth whorls the second fairly large and bulbous.

Height 4 mm., width 1·25 mm.

Locality—West Aust.: Ellenbrook (type), King George Sound 80 fms., 80 miles west of Eucla; S. Aust.: Cape Borda 55 fms.

Remarks—The shell is related to *R. gertrudis* Tenison Woods but it has few and strong axials. Holotype, Reg. No. D.14439, Sth. Aust. Museum.

Rissoina fiscina sp. nov.

(Pl. iii, fig. 12)

Shell small, short, solid, shining white, strongly axially ribbed, ten oblique ribs on the penultimate whorl, no spirals; whorls five, suture a little impressed, protoconch rather small and comparatively elate, of two smooth whorls the second considerably wider than the first, but narrower than the first adult whorl; aperture semilunar. Height 3·5 mm.; width 2 mm.

Locality—West Aust.: King George Sound (type), Ellenbrook, Rottnest.

Remarks—Holotype, Reg. No. D14440, Sth. Aust. Museum. This shell has less developed axials than those of *R. grata*.

PHOSINELLA Mörch 1876

Genotype—Rissoina sagraiana Orbigny. West Indies.

Shell reticulated by subequal sculpture; aperture profoundly sinuated below; operculum denticulate posteriorly.

R. hedleyi Tate 1899. Sth. Aust.: Fowler Bay (type), Backstairs Passage 17 fms., St. Francis Island, Eyre Peninsula, Cape Borda 55 fms.. West Aust.: Rottnest, King George Sound beach, Ellenbrook. Victoria.

Besides the typical form there is a variant with axial costae obsolete and more numerous spiral lirae, eight on the penultimate whorl, twenty-four on the body whorl inclusive of three small ones at the extremity of the pillar.

R. efficata Brazier 1877. Qld. (type). A synonym is *P. semisculpta* Tate 1899. Tas. (type, error).

R. clathrata Adams 1853. Philippines (type). Nth. Aust.: Torres Straits.

R. exasperata Souverbie 1866. New Caledonia (type). Funafuti, Qld., N. Aust. A synonym is *R. quasillus* Melvill.

R. horrida Garrett 1873. Viti Island, Port Curtis (type). Nth. Aust., Qld. Synonyms are *R. curtisi* Smith 1881 and *R. australis* Sowerby 1878.

R. allanae Laseron 1950. N.S.W.: Woolgoolga (type).

ZEBINELLA Mörch 1876

Genotype—Rissoina decussata Montagu. West Indies.

Shell very finely longitudinally costate and spirally striate, aperture widened and emarginate below.

Z. lintea Hedley and May 1908. Tas.: Cape Pillar 100 fms. (type); Vict.; S. Aust.: Beachport 40 fms., 47 fms., 110 fms., 150 fms., Cape Borda 55 fms., Cape Jaffa 130 fms.

All South Australian specimens have numerous distinct spiral incisions, some are colourless, some light straw-coloured and others have two brown spirals on the spire-whorls and five on the body-whorl as in *R. fausta*. A living specimen from Cape Borda 55 fms., has no colour bands but is of a uniform light greyish-brown.

R. rhyllensis Gatliff and Gabriel 1908. Vict.: Western Port (type). Verco 1908 recorded South Australian localities from Gulf St. Vincent to Beachport, 25 fms. to 150 fms., remarking that the species seems to live in about 100 fms. in South Australia and to be less frequent in the shallower and deeper water. The following localities can now be added: Spencer Gulf, Cape Jaffa 300 fms., St. Francis Island, Beachport 40 fms. and 200 fms.; West Aust.: Esperance. It is a rather variable shell. In some examples the whorls are quite flat, in others nearly all the whorl is flat, but the lower part is sharply convex, so that each whorl is overhung by the one above it. The sutures may be linear, or slightly impressed or slightly channelled. The surface may be quite smooth and shining. There may be spiral hair-like lines and similar axial lines. These may be of about equal validity, so as to produce a microscopic latticing, or either spirals or axials may be less valid up to complete obsolescence. Colour may be absent or there may be spiral rows of brown or orange spots, only one or two on the body whorl, and one on the spire whorls, or these spots may be axial blotches extending nearly from suture to suture. *R. lintea* approximates to the channelled suture and valid spirals and *R. fausta* to the smooth and painted variety. *R. rhyllensis* has a priority of one month.

R fausta Hedley and May 1908. Tas.: Cape Pillar 100 fms. (type); Sth. Aust. Cape Borda 55 fms. and 60 fms., Beachport 110 fms., 40 fms., rare in South Australia. Those from Cape Borda are almost smooth except for fine close-set spirals and have five or six orange spirals about one-third the width of the interspaces on the body-whorl, three on the spire-whorls. Specimens from Beachport 110 fms. have five microscopic incisions and one or two orange lines or series of orange blotches; body whorl with one to five orange lines or a series of curved axial blotches. Specimens from 60 fms. off Cape Borda are smooth with a single row of orange dots or with numerous axial vermicular orange lines on the spire and body whorl.

Rissoina jaffa sp. nov.

(Pl. iii, fig. 8)

Shell attenuate, translucent, cream to yellow, whorls eight, flatly convex, sutures lightly impressed, apex rather blunt, protoconch of two smooth, shining depressed whorls; sculpture of close, fine, weak regular axial plicae crossed by even finer striae; aperture expanded effuse; columella slightly sinuous. Height 9 mm., width 2·5 mm.

Locality—Sth. Aust.: Cape Jaffa 300 fms. (type), 90 and 150 fms., Beachport 150 and 200 fms. Cape Wiles 40 miles south, 100 fms. (Hedley); West Aust.: Great Australian Bight 40 miles west of Eucla, 72 and 120 fms.

Remarks—Holotype, Reg. No. D.14441, South Australian Museum. This species is remarkable for its attenuated translucent shell and weak though regular sculpture. It is of the *R. rhyllensis* group, but axially and spirally costate. According to specimens examined from Cape Wiles, 100 fms., it is the species recorded from that locality by Hedley 1911, as *R. rhyllensis*.

Rissoina axiscalpta sp. nov.

(Pl. iii, fig. 10)

Shell elongate-ovate, apex blunt, sutures narrowly channelled, spiral lirae about twelve on the body whorl and a few on the base, axial lirae about twelve in the penultimate whorl; aperture oblique, semilunar, inner lip slightly arcuate, outer lip free, thick, with an anterior channel. Height 6 mm., width 3 mm.

Locality—Sth. Aust.: Beachport 110 fms. (type), Newland Head 24 fms., Cape Borda 62 fms., Neptunes 45 fms., Beachport 49 fms.

Remarks—Holotype, Reg. No. D14442, South Australian Museum. *R. axiscalpta* is quite distinct from any other Australian species but is somewhat like *R. iredalei* Laseron 1950, differing in the greater comparative length, flatter whorls, weaker spaced axials.

R. elegantula Angas 1880. Sth. Aust.: Aldinga Bay, beach (type), Beachport 49 to 150 fms., Cape Borda 62 fms., Yankalilla beach, Porpoise Head 17 fms., Newland Head 20 fms., Backstairs Passage 17 fms., Wallaroo 15 fms., Neptunes 104 fms., Cape Jaffa 130 fms., St. Francis Island 35 fms. and beach, Kingston. beach; West Aust.: Rottnest, Yallingup, King George Sound, Bunbury 15 fms.; Tas.; Vict. The species is not uncommon from the beach to 17 fms., rarer in deeper water. Although there are no longitudinal lirae of the usual type, there are microscopic striae cutting the very fine interstaces between the spiral lirae.

R. reticulata Sowerby 1824. West Indies (type), Philippines, Qld., Nth. Aust. A synonym is *R. princeps* Mörch 1876.

R. inermis Brazier 1877. Nth. Aust. (type).

R. iredalei Laseron 1950. N.S.W., Port Jackson, 15 fms. (type).

SCHWARTZIELLA Nevill 1884

Genotype—*Rissoina bryerea* Montagu 1803. Cuba.

Shell with flexuous axial costae equal smooth interstaces, no spiral striae, lip with a longitudinally striate varix, rounded below, aperture without basal emargination.

R. nivea Adams 1851. Sth. Aust.: Port Lincoln (type), Eyre Peninsula, Investigator Strait 20 fms., Gulf St. Vincent, beach and dredged in shallow water, Cape Borda 55 fms., St. Francis Island 15-20 fms., and beach, Backstairs Passage 22 fms., Kingston; W. Aust.: King George Sound, beach and 12-14 fms., Bunbury 15 fms., Rottnest, Yallingup, Ellenbrook, Hopetoun; Tas.: north-west coast; Vict.

Synonyms are *R. lirata* Angas 1880, Aldinga and Holdfast Bay (type), *R. toxopleura* Tate 1893 new name for *R. lirata* Angas, not Gould 1861.

R. fasciata Adams 1853. N.S.W.: Sydney (type); Vict.; Tas.; Sth Aust.: American River, Kangaroo Island, Yankalilla, Pondolowie, Investigator Straits 15 to 20 fms., Beachport 110 fms., 49 fms., Cape Borda 55 fms., 62 fms., Robe, Kingston.

It is a shallow water species, good examples not being taken below 25 fms.; deeper water specimens are in poor condition. Synonyms are *R. flexuosa* Gould 1861, N.S.W. (type). *R. cincta* Angas 1867, N.S.W. (type), *R. hanleyi* Schwartz 1860.

R. cretacea Tenison Woods 1878, N.S.W. (type).

R. usitata Laseron 1950. N.S.W.: Clarence River, 15 fms. (type).

PYRAMIDELLOIDES Nevill 1884

Genotype—Rissoina insolita Deshayes 1863. Mauritius.

Shell narrowly turretted, with spiral nodulose ribs, tuberculated below the suture, outer lip crenulately varicose, laterally compressed aperture.

R. miranda 1861. Nth. Aust.: Cape York (type).

R. nodicincta Adams 1853. Philippines (type); Qld.; Nth Aust.; New Guinea.

RISSOLINA Gould 1861

Genotype—Rissoina elegantissima Orbigny 1853. West Indies.

Shell with an acute elevated ridge and an adjacent constriction around the anterior extremity, sculpture of predominating axial folds.

R. angasi Pease 1872. N.S.W.: Port Jackson, deeper water (type); Vict.; Tas.; Sth. Aust.; Gulf St. Vincent, Spencer Gulf, Kangaroo Island, Robe, Middleton, Beachport 49 fms., Cape Borda 52 fms., 62 fms., Cape Jaffa 130 fms.; West Aust.; Yallingup, Esperance, King George Sound, Rottnest, Hopetoun, Ellenbrook. A synonym is *Rissoina turricula* Angas 1867, not Pease 1860.

R. crassa Angas 1871. N.S.W.: Bottle and Glass Rocks, under stones, Port Jackson (type); Vict.; Qld.; Sth. Aust: Port Sinclair, St. Francis Island, Venus Bay, Edithburg; West Aust.: Ellenbrook, Rottnest, Hopetoun, Yallingup, King George Sound 12-14 fms., and beach.

R. cardinalis Brazier 1877. Qld. (type); Nth. Aust. A synonym is *R. mercurialis* Watson 1886 Wednesday Island, Cape York, north-east Australia, 8 fms. (type).

R. teres Brazier 1877. Nth. Aust. (type).

R. inconspicua Brazier 1877. Nth. Aust. (type).

R. pulchella Brazier 1877. Nth. Aust (type); Qld. A synonym is *R. honoluluensis* Watson 1886. Honolulu (type).

R. plicata Adams 1851. Philippines (type); Qld.; Nth. Aust. Synonyms are *R. scalarina* Adams 1853, *R. turricula* Pease 1860.

R. scolopax Souverbie 1877. New Caledonia (type); Nth. Aust.; Qld.

R. kesteveni Hedley 1907. Qld.: Mast Head Reef (type).

R. obeliscus Schwartz 1860. Mauritius (type); Qld. A synonym is *R. schwartziana* Dunker, Upota (type).

R. thaumasia Melvill and Standen 1898. Madras (type); Qld.; Nth. Aust.

STIVA Hedley 1904

Genotype—Stiva ferruginea Hedley 1904. N.S.W. (type); Sth. Aust.

Shell large, solid, resembles a *Scala* in general appearance but has the typical aperture of the Rissoinidae. The operculum is peculiar, being concentric and having a hollow projecting articulating limb.

S. ferruginea Hedley 1904. N.S.W.; Woolongong 100 fms. (type). A small specimen resembling this species rather than *S. royana* was found in dredged material at Beachport, 1550 fms.

S. royana Iredale 1924. N.S.W.: Twofold Bay 10-25 fms. (type); Vict.: Gabo Island 10-15 fms.

S. nielseni Laseron 1950. N.S.W.: Crookhaven 30-35 fms. (type).

TERTIARY SPECIES

Rissoina Orbigny 1840. *Rissoa indica* Orbigny. Peru.

Subgenus *Zebinella* Mörch 1876.

R. elegantula Angas 1880. Recent. Adelaidean. Pliocene.

R. varicifera Tenison Woods 1877. Table Cape, Miocene. 2, 4.

Subgenus *Schwartziella* Nevill 1884.

R. nivea Adams 1851. Recent. Adelaidean. Pliocene.

Subgenus *Mörchiella* Neville 1884.

R. johnstoni Tennison Woods 1877. Table Cape. Miocene.

Rissolina Gould 1861. *Rissoina elegantissima* Orbigny 1853. West Indies.

R. profunda Chapman and Gabriel. 2, 3.

Family RISSOIDAE

The Recent Australian species of this family were reviewed by the author in the Trans. Roy. Soc. S. Aust., 68, (2), 1944, 286-314, pl. xvi, fig. 1-12. In the Rec. Aust. Mus., 22, No. 3, 257-287, C. F. Laseron adds a few new genera and species from New South Wales. He comments on the genus *Laevilitorina* Pfeffer here regarded as belonging to the family Littorinidae. A new species of the genus *Eusetia* Cotton 1944 is now described.

Eusetia laterna sp. nov.

(Pl.iii, fig. 11)

Shell thick, solid, pyramidal, white to slate-coloured; suture linear, aperture round, expanded; sculpture of microscopic crowded axial striae; protoconch rather depressed, of two smooth whorls. Height 3·25 mm., width 2 mm.

Locality—Beachport 200 fms. (type), also 40 fms., 150 fms., and 10 fms.; Cape Borda 55 fms.; Cape Jaffa 130 fms.; St. Francis Island 35 fms.

Remarks—Holotye, Reg. No. D.14443. S. Aust. Museum.

R. laterna is probably most like *E. columnaria* May 1910, but it is much smaller, has less swollen whorls and is of a different shape.

TERTIARY SPECIES

Tertiary species of this family are arranged as follows:—

Haurakia Iredale 1915.

H. tateana Tenison Woods 1877. Table Cape. Miocene.

H. gabrieli Chapman and Crespin 1928. Sorrento Bore, Victoria, Balcombian. 2,4,5.

H. demessa Tate and May 1900. Recent. Recorded from the Adelaidean, Pliocene.

H. novarensis Frauenfeld 1867. Recent. Recorded from the Adelaidean, Pliocene.

Linemera Finlay 1924.

L. suprasculpta May 1915. Recent. Recorded from the Adelaidean, Pliocene.

L. sculptilis May 1919. Recent. 2, 3.

Epigrus Hedley 1903.

E. chrysalidus Chapman and Gabriel 1914. Mallee bore, Victoria, Kalimnan, Pliocene.

E. cylindraceus Tenison Woods 1878. Recent. 2, 3.

Estea Iredale 1915.

E. bicolor Petterd 1884. Recorded from the Adelaidean, Pliocene.

E. kershawi Tenison Woods 1877. Recent. 2, 3, 4.

Scrobs Watson 1886.

S. galliffiana Chapman and Gabriel 1914. Mallee bore, Kalimnan, Pliocene.

Botelloides Strand 1928.

B. bassiana Hedley 1911. Recent. Mallee bore, Kalimnan, Pliocene.

Kaurenella Ludbrook 1941.

K. denotata Ludbrook 1941. Adelaidean, Pliocene.

Subestea Cotton 1944.

S. stevensiana Tenison Woods 1877. Table Cape, Miocene. 2, 4.

Eusetia Cotton 1944.

E. buliminoides Tate and May 1900. Recent, Kalimnan.

Lironoba Iredale 1915.

L. australis Tenison Woods 1877. Recent, Kalimnan.

Family FASCIOLARIIDAE

The two genera *Pleuroploca* and *Colus* are reviewed here. The remaining genera, Recent and Tertiary, are being worked out. The genotype of the typical genus is *Murex tulipa* Linne 1758 from North America. Related Australian species are placed in the genus *Pleuroploca* Fischer.

PLEUROPLOCA Fischer

Pleuroploca Fischer 1884. *Genotype—Murex trapezium* Linne 1758. Amboina. *Fasciolaria audouini* Jonas 1846, Red Sea, is said to be a synonym.

P. trapezium Linne 1758. Indo-Pacific. Two South Australian Museum specimens, D.6923, are labelled "North Queensland" and are the only records for the species in Australia to my knowledge.

P. filamentosa Bolten 1798. Indo-Pacific, Nth. Aust., Qld. We have specimens of this coral-living species from Cape York, Townsville, and Murray Island.

P. ferruginea Lamarck 1822. Australia (type). Broome. This species is narrower than *P. filamentosa*. A synonym is *Fasciolaria inermis* Jonas 1846, Red Sea.

P. altimasta Iredale 1930. Qld.: Port Curtis (type). The coastal representative of *P. filamentosa*.

P. fusiformis Valenciennes 1840. Sth. Aust.; Tas. The figure in Kiener, Coquilles Vivantes, 6, 13, pl. iv, fig. 2, published 1840, are like the shell from the South-East, South Australia. Kiener gives the locality "Nouvelle-Hollande." It is a small thick, narrow shell with the upper whorls somewhat axially ribbed, the lower whorls without axials, the outer lip well bevelled and validly spirally lirate within.

P. australasia Perry 1811. N.S.W., Vict., Tas., West Aust. Sth. Aust. This species described by Perry as "a native of New Holland and Van Diemen's Land" is one of the most common larger gastropods of South Australia and occurs all along the coast alive from low tide mark down to 55 fms. Perry's figure is unmistakable and represents a medium-sized shell with the typical large protoconch, rounded whorls with scarcely any shoulder, rather faint rounded axial ribs, colour olive-green, ribs tinted by brown spiral lirae, the aperture spirally streaked within the labrum, the columella three-plaited.

P. coronata Lamark 1822. Vict., N.S.W., Sth. Aust., Tas., West Aust. This species was described from "des iles King et des Kanguroos." It is only a variant of *P. australasia* and with the same geographical and vertical distribution. It may be sharply angled and coronated at the shoulder, but grades into the round-shouldered *P. australasia*. Both have angled and coronated early spire whorls, the adult only showing to which variant the form belongs.

P. bakeri Gatliff and Gabriel 1912. Vict. (type), N.S.W. A specimen in the South Australian Museum, D.7966, from Gabo Island, 70 fms., is typical but large, measuring 148 mm. in length. It has the strong whorls and longitudinal plications. Two specimens, D.68396, dredged off Eden, New South Wales, are atypical but probably belong to this species.

Pleuroploca eucla sp. nov.

(Pl. iv, fig. 1, 2, 3)

Shell elongate, fusiform of seven whorls excluding the protoconch of two smooth glassy, slightly pulliform whorls; spire whorls trapezoidal, with a sharp central keel, concave above, slightly convex below where they are embraced by the suture; the keel has plicate tubercles from which long, basal axial costae extend, gradually fading out at the sutures, eleven in the body and penultimate whorl; axials crossed by spiral lirae equidistant except over the base where they become more oblique and distant; aperture elongate oval, outer lip crenulate throughout, numerous close spiral striae within; columella smooth, three oblique plaits; periostracum thin, greyish; aperture and shell white.

Length 143 mm, width 55 mm.

Locality—West Aust., 60 miles west of Eucla, 72 fms. (type).

Remarks—Holotype, D.14445, Sth. Aust. Museum.

A half-grown specimen 80 mm. x 35 mm. is typical but has a comparatively larger almost bulbous protoconch, but it is undoubtedly the same species. A third specimen, a juvenile, is 33 mm. in length and shows the typical features. The species is readily separated from *P. australasia coronata* in being more elongate, keeled, white in colour and of more delicate structure. The holotype was mentioned as a variant of *Fasciolaria australasia* by Verco 1912.

COLUS Humphrey

Colus Humphrey 1797. Mus. Calonnianum, 34.

Genotype—Murex colus Linne 1758. Indo-Pacific. North Australian species besides the genotype are *C. forceps* Perry 1811, *C. nicobaricus* Lamarck 1822. From New South Wales are recorded *C. sinovellus* Iredale 1928, *C. consetti* Iredale 1928, *C. variegatus* Perry 1811 = *C. turrispictus* Martyn 1786 = *C. laticostatus* Angas 1877 = *C. genticus* Iredale 1936. From Queensland are recorded *C. boardmani* Iredale 1930, and from Western Australia *C. philippi* Jonas 1846, *C. ventricosus* Menke 1843, *C. multicarinatus* Lamarck 1822, *C. longicaudus* Lamarck 1816, N.W.A., *C. exilis* Menke 1943.

C. australis Quoy and Gaimard 1833. Sth. Aust. All along the coast from low tide down to 40 fms., and dead at 50 fms. to 150 fms. West Aust., Bunbury, Albany beach dredged down to 28 fms. King George Sound, 50 fms. to 120 fms. Great Australian Bight, west of Eucla.

The species is very common in South Australia. Verco 1895 gives *Fusus crebriliratus* Reeve 1847, *F. marmoratus* Philippi 1846, *F. rudicostatus* Sowerby 1880, *F. laevigatus* Sowerby 1880, *F. nodicinctus* Adams 1855, *F. aureus* Reeve 1847, and *F. caudatus* Quoy and Gaimard 1833 as synonyms. The protoconch is of two and a half whorls, the first two round and smooth and then half a whorl with axial bars only, ending in a simple verticle lip. From this point start abruptly the spiral lirae of the mature shell. The two smooth whorls may be swollen and in some specimens the axials cover more than a whole whorl.

Colus novaehollandiae Reeve 1848. Tas. (type), N.S.W., Vict., Sth. Aust.: Hardwicke Bay, Willunga, Glenelg, one from the beach at each locality, dredged Investigator Straits all small broken specimens in poor condition; West Aust., 90 miles west of Eucla 100 fms., four young specimens rather sharply keeled in the middle of the whorls.

Family VOLUTIDAE

The family was reviewed by the author in the Rec. S. Aust. Mus., 9, No. 2, 181-195.

The following species may now be added:—*Lyreneta laseroni* Iredale 1937, N.S.W. *Lyria deliciosa howensis* Iredale 1937, Lord Howe Island. *Lyria opposita* Iredale 1937, Mast Head Reef. *Cymbiola punctata* Swainson 1823, N.S.W. and Qld. *Ericusa sericata* Thornley 1951, Broughton Island, N.S.W., and the new species here described.

Ericusa orca sp. nov.

(Pl. iv, fig. 4, 5, 6)

Shell fusiform, elongate, rather thin, spire and body whorl comparatively narrow for the genus; polished, smooth except for fine accremental striae; whorls narrow, only slightly convex and not angled; columella with three weak plaits, outer lip a little thickened at the edge; colour cream except for a faint pink tinge towards the suture and obscure short axial pale-pink flames just below the suture; interior of aperture dark cream, suture close and simple; protoconch papillary, bluish, oblique, first whorl very small, second large, the third of the same diameter as the second, merging into the first adult whorl, all polished and smooth except for microscopic accremental striae; first two adult whorls microscopically striate. Length 148 mm., width 58 mm.

Locality—West Aust: 90 miles west of Eucla, 100 fms.

Remarks—The species is somewhat like *E. fulgetrum* Sowerby but is narrower, thinner, has less convex whorls; and the protoconch is comparatively smaller though basically similar. Holotype, D. 13816, S. Aust. Museum.

Holotype, D. 13816, S. Aust. Museum.

ERICUSA FULGETRUM (Sowerby)

The species occurs right along the South Australian coastline. Collectors take it alive in shallow water on sand banks. Between Coobowie and Wool Bay on the east coast of Yorke Peninsula the tides sometimes form a sand-bar which is exposed at a very low tide to the heat of the sun. When the sea begins to cover the bar, as the tide rises, these volutes and also such shells as the "False Helmet" *Hypocassis bicarinata* and "Lyre Shells" *Lyria mitraeformis* emerge from the sand. Collectors say that a dozen or more specimens have been taken in a few hours. Of the eight varieties described by Verco 1912, the figured specimen of one only is entered by him in the Museum Register, November 1915, as "D. 439 *Ericusa fulgetrum* Sby. Var. d*ictua* Verco type shell." I have not seen specimens of the *unicincta* and *bicincta* varieties.

It is not found in Victoria and the only Western Australian representative is the deeper water species described above as *E. orca.* Deeper water specimens are usually of the *dictua, lunisligata* or *connectens* varieties. *E. fulgetrum connectens* is usually quite small but a fine living specimen recently dredged by Mr. J. Veitch at Port Lincoln measures six and a quarter inches in length.